

Financial Benefits:

- Demonstrates risk management
- Record of stresses allows hull life to be maximised
- Detects early damage, cutting repair costs
- Can add to hull value on S&P market
- Can aid negotiations of dry-dock dispensations
- Improved charter rates
- Reduced insurance premiums
- Fuel savings



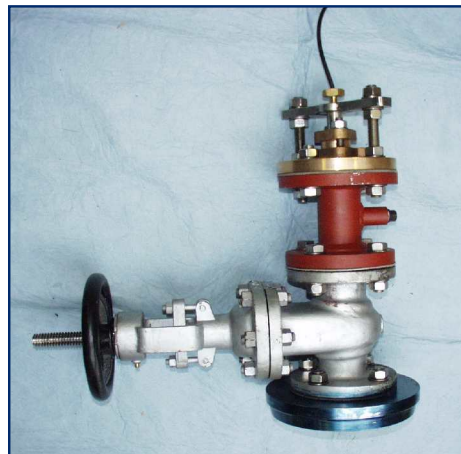
Strainstalls StressAlert Hull Stress Monitoring Technology is the result of over 30 years at the leading edge of load measurement, strain and stress determination. This expertise, together with a strong commercial understanding of vessel operating control and safety, means that StressAlert is more than just an alarm system.

From an operational perspective, StressAlert enhances vessel safety due to a reduction in high stress incidences. This is because the system provides instant access to data on the stress a vessel is being subject to, whether from sea-state or induced stresses from cargo operations. This allows the ships master to alter course or speed to lower stress levels. In some conditions a minor change of heading will result in significant reductions in stress levels without the need to reduce speed, and in other situations decreasing or increasing speed may be beneficial. During cargo operations, loading and discharging plans can be adapted to minimise the effects of structural stress.

Long baseline strain gauges, mounted on the deck or in holds (according to vessel type), measure structural bending. Bow accelerometers measure the impact of bow slamming. An option bow pressure gauge measures dynamic bow draft.



Long baseline strain gauge

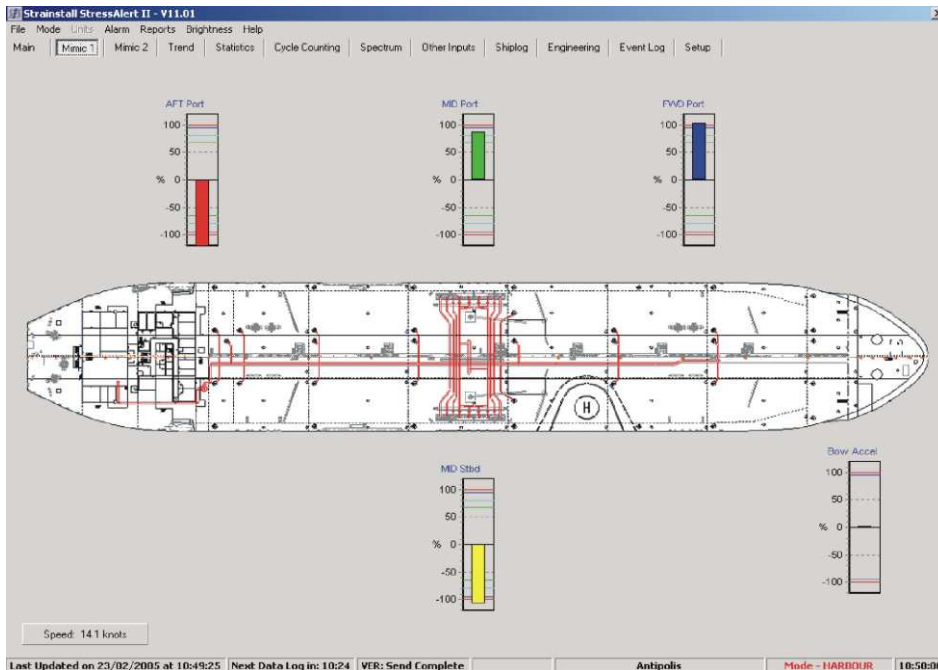


Bow pressure gauge

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A range of display pages gives quick and easy access to information, using mimic, trend and tabular display, statistical information plus context sensitive help information. Data is logged to provide a permanent record of vessel operation for post voyage analysis.



- IMO Resolution 646 recommends that all bulk carriers over 20,000 dwt are fitted with hull stress monitoring
- Can be installed on new-builds or as retrofit
- Meets classification societies requirements (ABS, DNV, Lloyds)

A signal conditioning unit interfaces and processes all sensor signals. The inclusion of an option zener barrier unit provides intrinsic safety for sensors installed in hazardous areas. The system is fitted with a UPS (uninterruptible power supply) which provides over 3 hours operation in the event of ships power failure.

The type approved marinised PC provides data acquisition and processing, display processing, data logging and high resolution colour graphics. An alarm display unit provides dedicated alarm indication. Comprehensive analysis of measured data provides vessel stress history and fatigue prediction.

StressAlert will benefit:

- Tankers/bulkers of panamax size and above
- Container vessels of 4000teu and above
- All double-hulled tankers with large SWBM's when ballasted
- FPSO's
- Car Ferries
- New hull designs

The system can be configured to suit different types and sizes and meet individual operating needs. It can also be extended to achieve higher specifications.